UNITED STATES PATENT AND TRADEMARK OFFICE

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10/591,600	09/05/2006	Rahul Malik	L9289.06170	3382

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2009*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-22 and 28-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-22 and 28-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   The amendment filed on 5/28/09 has been entered. Claims 18, 19, 21, 22, 28, and 29

have been amended. Claims 1-17 have been cancelled. Claim 30 has been added. Claims 18-22

and 28-30 are currently pending in this application, with claim 18 being independent.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 18, 19, 22, and 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by

Benveniste **(US Patent No. 7,095,754)**.

        Regarding claim 18, Benveniste teaches a wireless communication method

comprising: at media access controllers of all receiving stations in a communication

system, detecting, in a received signal, an indication of whether or not a response is

expected or whether or not there is an intent to continue (Frame header information

includes feedback information on the success or failure of a transmission

attempt that are received by nodes waiting to transmit their packet, where said

success or failure **is based on the number of retransmission attempts by a node**

and its neighbors and from aging of such retrials, an estimation of expected

traffic (responses from other nodes) is made from said frame header

information, and said nodes waiting to transmit their packet adjust their back-off

counters based on said estimates, indicating said waiting stations detect an

indication of whether or not a response is expected or whether or not there is an

intent to continue, Column 27, lines 42-50 and 57-67, Column 28, lines 1-9 and

15-20); at a station receiving, in a received signal, an indication that a response is

expected or there is an intent to continue, interpreting a first idle time slot subsequent

to a transmission as being a time that is reserved for a signaled response/continuation

(In a Tiered Contention Multiple Access (TCMA) protocol, a MAC layer gains

access to the network during the 1st time slot 715 following transmission of last

symbol of previous frame 713 to allow for highest priority packets to be

transmitted, where said 1st time slot is a time slot during which frames are

transmitted without contention, indicating a time during which a signal is

expected to be transmitted or continue, Column 7, lines 35-37, Column 21, lines

66-67 and Column 22, lines 1-8 and Figure 7B), interpreting a second idle time slot

subsequent to the transmission as being reserved for a network controller to gain a

prioritized medium access **(In a Tiered Contention Multiple Access (TCMA)**

protocol, a point coordinator 705B in an access point 708B receives a higher

QoS(B) data source than a contending access point 708A, the access point 708B

associated with the point coordinator 705B seizes control of the medium during

a TCMA access point contention period 735, during which no response is

expected due to colliding transmissions of contending wireless stations that

signal to said access point 708B associated with the point coordinator 705B it

must perform the TCMA protocol, to give priority to a waiting wireless station

702 that is waiting to transmit a high priority contention free poll frame 720

during the next available time slot 716, indicating said point coordinating access

point 708B controls the network during said contention period 735 during which

no response is expected due to the colliding transmissions, Column 21, lines 37-

39, 52-53 and 56-58 and Column 22, lines 9-25), and interpreting a third idle time slot

subsequent to said transmission as being a minimum time a station waiting to initiate a

transmission on a medium must wait before commencing a backoff procedure or

initiating a transmission (After the time slot following 735, a wireless station

waiting to initiate a transmission 704B waits time slot 716 before initiating their

transmission packet 724B, Column 22, lines 42-49 and Figure 7B); and at a station

receiving, within a received signal, an indication that a response is not expected or

there is no intent to continue, interpreting a first idle time slot subsequent to

transmission as being reserved for a network controller to gain a prioritized medium

access (In a Tiered Contention Multiple Access (TCMA) protocol, a point

coordinator 705B in an access point 708B receives a higher QoS(B) data source

than a contending access point 708A, the access point 708B associated with the

point coordinator 705B seizes control of the medium during a TCMA access

point contention period 735, during which no response is expected due to

colliding transmissions of contending wireless stations that signal to said

access point 708B associated with the point coordinator 705B it must perform

the TCMA protocol, to give priority to a waiting wireless station 702 that is

waiting to transmit a high priority contention free poll frame 720 during the next

available time slot 716, indicating said point coordinating access point 708B

controls the network during said contention period 735 during which no

response is expected due to the colliding transmissions, Column 21, lines 37-39,

52-53 and 56-58 and Column 22, lines 9-25) and interpreting a second idle time slot

subsequent to said transmission as being a minimum time a station waiting to initiate a

transmission on a medium must wait before commencing a backoff procedure or

initiating a transmission **(After the time slot following 735, a wireless station**

waiting to initiate a transmission 704B waits time slot 716 before initiating their

transmission packet 724B, Column 22, lines 42-49 and Figure 7B).

Regarding claim 19, Benveniste teaches the method according to claim 18, wherein said

indication is included in a header of a frame **(Frame header information includes feedback**

information on the success or failure of a transmission attempt that are received by nodes

waiting to transmit their packet, Column 27, lines 42-50 and 60-67, Column 28, lines 1-9

and Figure 6).

Regarding claim 22, Benveniste teaches the method according to claim 18, wherein said

indication is in the form of one subcarrier or plural subcarriers comprised of subcarriers for data

transmission or a combination of subcarriers used for data transmission in a multicarrier symbol

of a frame **(Said TCMA protocol includes a clear channel assessment (CCA) function that**

allots a time period that is set at the minimum attainable time for the physical (PHY)

specification, where different physical (PHY) specifications are defined by the IEEE 802.11

Wireless LAN standard, one of them being Orthogonal Frequency Division Multiplexing

(OFDM), which transmits information via subcarriers and OFDM symbols, Column 32,

lines 22-28 and 36-38. Also, Figure 7A comprises a wireless LAN in which said symbol of a

previous frame 713 is transmitted).

Regarding claim 28, Benveniste teaches the wireless communication method according to

claim 18, further comprising the steps of: at the station receiving, within the received signal, the

indication that a response is not expected or there is no intent to continue (**Said frame header**

information includes feedback information on the success or failure of a transmission

attempt that are received by nodes waiting to transmit their packet, where said success or

failure is based on the number of retransmission attempts by a node and its neighbors and

from aging of such retrials, an estimation of expected traffic (responses from other nodes)

is made from said frame header information, and said nodes waiting to transmit their

packet adjust their back-off counters based on said estimates, said successful transmission

type information being received by waiting nodes indicating that said waiting stations

detect when there is no expected response, Column 27, lines 42-50 and 57-67, Column 28,

lines 1-9 and 15-20), checking a medium activity indicator determining the end of activity on the

medium (A NAV indicator is set by a duration field in all stations to indicate the amount of

time a medium is reserved and thus when the end of activity will occur to all stations

detecting an RTS frame, where RTS frames are employed that contain said duration field

and are included as part of packet information, Column 5, lines 51-58, Column 8, lines 39-

41, Column 28, lines 4-9 and Figure 6); and redefining an interpretation of an inter-frame space

to contain a shorter time slot than a time slot usually allocated when the medium activity

indicator is checked (Since interframe space is redefined for a higher priority transmission to reduce the normal time waited for the medium to be available again during this process, the inter-frame space has been redefined to contain a time slot shorter than the time slot usually allocated when the medium activity indicator is checked, as explained by columns above).

Regarding claim 29, Benveniste teaches the wireless communication method according to claim 18, further comprising the steps of: at the station receiving, within the received signal, the indication that a response is not expected or there is no intent to continue (**Said frame header information includes feedback information on the success or failure of a transmission attempt that are received by nodes waiting to transmit their packet, where said success or failure is based on the number of retransmission attempts by a node and its neighbors and from aging of such retrials, an estimation of expected traffic (responses from other nodes) is made from said frame header information, and said nodes waiting to transmit their packet adjust their back-off counters based on said estimates, said successful transmission type information being received by waiting nodes indicating that said waiting stations detect when there is no expected response, Column 27, lines 42-50 and 57-67, Column 28, lines 1-9 and 15-20**), resetting a medium activity indicator when no medium activity is indicated at the instant of time that activity is expected as indicated by the medium activity indicator (A NAV indicator is set by a duration field in all stations to indicate the amount of time a medium is reserved and thus when the end of activity will occur to all stations detecting an RTS frame, where RTS frames are employed that contain said duration field and are included as part of packet information. Said NAV expires (is reset) when access to the

medium is available again, indicating that if the NAV of the station expects activity (NAV is expired and set at some value) but no activity occurs, such as during a transmission collision, the NAV will be reset back to the value indicating to the wireless station not to expect activity for some duration indicating the time reserved/needed by the medium, Column 5, lines 51-58, Column 8, lines 39-41, Column 28, lines 4-9 and Figure 6); and redefining the interpretation of the inter-frame space to contain a time slot shorter than a time slot usually allocated when the medium activity indicator is reset (Since interframe space is redefined for a higher priority transmission to reduce the normal time waited for the medium to be available again after a transmission failure during this process, the inter-frame space has been redefined to contain a time slot shorter than the time slot usually allocated when the medium activity indicator is reset, as explained by columns above).

Regarding claim 30, Benveniste teaches the wireless communication method according to claim 18, further comprising a step of, at the station receiving the indication that a response is not expected or there is no intent to continue, redefining an interpretation of an inter-frame space to contain a shorter time slot shorter than a time slot usually allocated (Said **nodes waiting to transmit their packet adjust their back-off counters based on said estimates, said successful transmission type information being received by waiting nodes indicating that said waiting stations detect when there is no expected response**, Column 27, lines 42-50 and 57-67, Column 28, lines 1-9 and 15-20).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

6.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.   Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Benveniste.

      Regarding claims 20 and 21, Benveniste teaches the method according to claim 18, where

said indication is included in a header of a frame. Benveniste does not teach said indication is

included in a preamble or footer of a frame. It would have been an obvious matter of design

choice to one of ordinary skill in the art at the time of the invention to modify the invention of

Benveniste to place the indication in the preamble or footer of said frame for the benefit of

transmission efficiency, since applicant has not disclosed that this difference solves any stated

problem or is for any particular purpose and it appears that the invention would perform equally

well with or without the difference.

Response to Arguments

8.   Applicant's arguments regarding claims 18-22 and 28-30, filed 5/28/09, have been fully

considered but they are not persuasive for the following reasons:

Regarding Benveniste not disclosing the receipt of an indication of an expected

Response, frame header information includes feedback information on the success or

failure of a transmission attempt that are received by nodes waiting to transmit their

packet, where said success or failure is based on the number of retransmission

attempts by a node and its neighbors and from aging of such retrials, an estimation of

expected traffic (responses from other nodes) is made from said frame header

information, and said nodes waiting to transmit their packet adjust their back-off

counters based on said estimates, indicating said waiting stations detect an indication of whether

or not a response is expected or whether or not there is an intent to continue, as indicated in

Column 27, lines 42-50 and 57-67, Column 28, lines 1-9 and 15-20.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to FRANK DONADO whose telephone number is (571) 270-5361.

The examiner can normally be reached Monday-Friday, 9:30 am-6 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for

the organization where this application or proceeding is assigned is 571-270-6361.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-273-8300.

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